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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,262	07/31/2003	Charles H. Downs JR.	32995.2	7693

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EXAMINER	
JOHNS, ANDREW W	
ART UNIT	**PAPER NUMBER**
2621	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/631,262	DOWNS, JR.	
	Examiner	Art Unit	
	Andrew W. Johns	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 31 July 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 31Jul2003.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2 and 11 are rejected under 35 U.S.C. § 102(e) as being anticipated by Cahill et al. (US 5,963,659 A).

As per claim 1, Cahill et al. teaches that after the MICR line cannot be initially recognized (decoded) that the check is deposited in a repass pocket (209 in Figure 3; column 14, lines 27-30) and reprocessed where character recognition is used on the check image to determine the characters that comprise the MICR line (column 18, line 65 through column 19, line 4). Therefore, Cahill et al. teaches digitally applying character recognition processing (column 14, lines 56-65; column 16, lines 24-27 and 56-60) to an invalidated (reasons for errors are well known; column 19, lines 18-19) MICR line (column 19, lines 31-37) in a digital image of a financial item (i.e., check; column 14, lines 23-25) after the financial item has been sent to a reject pocket (i.e., the repass pocket 209 in Figure 3) of a financial item sorter (200 in Figure 3).

As per claim 2, Cahill et al. teaches processing a check as a financial item through a check sorter (column 16, lines 17-21; 200 in Figure 3), including sensing the check for a MICR line and characters therein (column 16, lines 22-23), determining the check has an invalid MICR line (column 16, lines 47-51), and creating a digital image of the check (column 16, lines 20-21;

column 17, lines 58-62; 264 in Fig 5A), and thereafter performing the digitally applying character recognition processing to the invalidated MICR line in the digital image of the check (A "best read" is determined and checks are processed normally unless it meets or exceeds a threshold; column 19, lines 50-53; the "best read" is determined by using optical character recognition, column 18, lines 29-31) after the check has been sent to the reject pocket (209 in Figure 3).

As per claim 11, Cahill et al. teaches transporting a check through a check sorter (200 in Figure 3); generating electrical signals in response to sensing a MICR line on a check in a check sorter (column 2, lines 65-67; column 4, lines 60-65; and column 6, lines 22-27; it is inherent that a MICR line reader generates electrical signals that are decoded by the computer to create the electronic file containing check and account data; column 14, line 66 through column 15, line 10); determining in a programmed computer whether the electrical signals represent a valid or an invalid MICR line (column 18, line 65 through column 19, line 4; column 19, lines 13-19); in response to determining that the electrical signals represent an invalid MICR line, and off-line from the check sorter and the transporting of the check (column 14, lines 49-55; the processing is performed off-line) digitally processing the digital image of the check to identify MICR characters therein (column 16, lines 24-27; depending upon the number of errors detected in the initial decoding of the MICR line, the check is placed in the repass pocket 209 and the MICR recognition (decoding) process is repeated; a "best read" is determined again and checks are processed normally unless it meets or exceeds a threshold; column 19, lines 50-53).

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3-4 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cahill et al. as applied to claims 1-2 and 11 above, and further in view of Kruppa (US 6,243,504 B1).

As per claims 3, 4 and 11, these claims recite substantially the same limitations, so that the following remarks apply equally to each claim. Cahill et al. teaches the use of optical character recognition of a check image MICR line as a redundant recognition mechanism to the magnetic MICR line reader (column 16, lines 22-27). Cahill et al. uses the recognition results of the two different processes to determine if the check must be reprocessed (column 18, line 65 through column 19, line 3). Cahill et al. does not specifically teach changing the recognized magnetic recognition results data based upon the optical character recognition results gathered from the check image.

However, Kruppa teaches changing digitally stored MICR line data for the check in response to digitally applying character recognition processing to the invalidated MICR line (column 8, lines 47-49 and 57-59; Cahill et al. is relied upon to provide the entire image of the check and using only a portion of the image as stated in Cahill et al. at column 16, lines 25-26; the portion of the image obtained in Cahill et al. is analogous to the pixel representation used by Kruppa to perform the character recognition at column 6, lines 1-5).

In the summary of the invention, Kurppa teaches that it is well known to use two different types of sensors (i.e., magnetic and optical) either in parallel (i.e., simultaneously) or in serial (i.e., sequentially) to suit different purposes (column 4, lines 11-16). In the serial or

sequential sensor arrangement, Kruppa teaches that if one sensor successfully recognizes the data that the other sensor can be bypassed (column 3, line 65 through column 4, line 11). The motivation for utilizing the two sensors in this fashion is increased accuracy and efficiency.

It would have been obvious to one of ordinary skill in the art to utilize the sensor arrangement of Kruppa in the system of Cahill et al. because using a complementary sensor, like the optical character recognition, to the magnetic MICR reader increases the read rate of the check sorter, thereby increasing the check sorting capacity of the overall system.

5. Claims 5-10 and 13-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cahill et al. as applied to claims 1-2 and 11 above, and further in view of Grabowski et al. (US 4,408,342 A).

As per claim 5, Cahill et al. teaches digitally processing a digital image of a check to search for a digital image of a MICR line of the check (column 16, lines 24-27). Cahill et al. only states that a portion of the image is used to decode the MICR line, no details are provided, implying that any method well-known in the art can be used to detect the MICR characters in an image.

Grabowski et al. teaches digitally changing an orientation of the digital image of the check in response to at least one failure of the digitally processing of the digital image of the check to find a digital mage of the MICR line (column 3, lines 20-25, 36-48, 54-62; column 4, lines 24-27). Grabowski et al. teaches using the variable "D" to change the Y coordinate to better align the MICR character template by compensating for skew induced by the transport mechanism (column 3, lines 42-46).

It would have been obvious to use the well known skew detection and compensation system of Grabowski et al. in the check image system of Cahill et al. to determine the location of

MICR characters in only a portion of the check image with increased accuracy of recognition and reduction of rejected or misread characters due to noise and foreign signals.

As per claims 7, 9, 15, 17 and 24-25 Cahill et al. meets the limitation that states "a selected area of the digital image of the check" (column 16, lines 24-27), but Cahill et al. does not specifically teach how the image character recognition system works.

Grabowski et al. teaches using a first MICR font template (Figures 9 and 10; column 6, lines 19-21; column 7, lines 6-15) to identify MICR characters across the length of a selected area (i.e., scan band; column 7, line 6) of the digital image of the check; detecting a position for a MICR character not identified by the first MICR font template relative to at least one MICR character identified by the first MICR font template (column 4, lines 46-57; Grabowski et al. teaches that unrecognized character positions are specifically indicated for recognition during Pass 2); in response to detecting a position for a MICR character not identified by the first MICR font template, using a second MICR font template to identify the MICR character in the detected position (Figure 8; column 3, line 65 through column 4, line 5; column 6, lines 18-25 and 51-59). Grabowski et al. teaches that each template is compared to a character template a second time in an attempt to recognize the previously unrecognized character. The second MICR font template (the template for the number "2") is merely another MICR character different from the first MICR font template (i.e., the template for the number "1").

As per claims 6, 8, 10, 14, 16 and 18, Grabowski et al. teaches changing ("revised," column 4, line 50) stored (in working memory; column 5, line 1) MICR line data for the check in response to identifying valid MICR characters at all possible positions along the MICR line (Figure 5C; column 4, lines 47-53).

It would have been obvious to one of ordinary skill in the art to utilize the template matching algorithm of Grabowski et al. in the image recognition system of Cahill et al. because it is well-known, both use a two-pass system, and the addition of the Grabowski et al. method reduces the number of images that need to be gathered by the Cahill et al. system, thereby reducing the number of memory storage operations.

As per claim 13, Cahill et al. does not specifically teach changing the image orientation. However, Grabowski et al. teaches digitally changing an orientation of the digital image of the check in response to at least one failure of the digital processing of the digital image of the check to find a digital image of the MICR line (column 3, lines 20-25, 36-48, 54-62; column 4, lines 24-27). Grabowski et al. teaches using the variable "D" to change the Y coordinates to better align the MICR character template by compensating for skew induced by the transport mechanism (column 3, lines 42-46).

As per claim 19, Cahill et al. teaches a check sorter (2 in Figures 1 and 3), including a MICR reader (205 in Figure 3) and a digital image reader (204 in Figure 3; column 14, lines 22-25) for checks transported by the check sorter; a controller (201 in Figure 3) connected to the check sorter (200 in Figure 3), the controller including a MICR interpreter (the controller inherently must be able to respond to the signals provided by the MICR reader) responsive to the MICR reader (column 14, lines 38-40; column 16, lines 29-33; column 18, lines 37-40); a database connected to the check sorter to provide a repository for digital images of checks provided from the digital imager (column 22, lines 8-12); and a digital image analyzer connected to the controller and to the database to analyze by digital image processing a check digital image for a check indicated by the MICR interpreter of the controller to have an invalid MCIR line (A "best read" is determined and checks are processed normally unless it meets or exceeds a

threshold; column 19, lines 50-53; the "best read" is determined by using optical character recognition, column 18, lines 29-31), wherein the off-line digital processing occurs after the check sorter has completed transporting the respective check (column 14, lines 49-55; the processing is performed off-line). Grabowski et al. teaches that the MICR scan data which is analogous to the image portion data of Cahill et al. is stored in a buffer before being transferred to working memory (column 5, lines 3-8).

It would have been obvious to one of ordinary skill in the art to utilize the caching system of Grabowski et al. in the system of Cahill et al. in order to reduce the number of steps needed in the repass step of Cahill et al. One would be motivated to use the features of Grabowski et al. in the system of Cahill et al. as both utilize a two-pass system to locate and recognize MICR character data. By maintaining the image in memory, Cahill et al. would merely have to collect the magnetic MICR sensor data for verification.

As per claim 34, Cahill et al. teaches means for applying character recognition processing on an invalidated MICR line in a digital image of a financial item (column 14, lines 23-25; column 16, lines 24-27).

As per claim 35, Cahill et al. teaches a detector to detect a digital image of the invalidated MICR line in the digital image of the financial item (column 16, lines 24-27), but Cahill et al. only states that a portion of the image is used to decode the MICR line and no details are provided. Cahill et al. does not specifically teach an image orienter. However, Grabowski et al. teaches an image orienter, responsive to the detector, to change an orientation of the digital image of the financial item (column 3, lines 20-25, 36-48 and 54-62; column 4, lines 24-27). Grabowski et al. teaches using the variable "D" to change the Y coordinates to better align the

MICR character template by compensating for skew induced by the transport mechanism (column 3, lines 42-46).

It would have been obvious to use the well known skew detection and compensation system of Grabowski et al. in the check image system of Cahill et al. to determine the location of MICR characters in only a portion of the check image with increased accuracy of recognition and reduction of rejected or misread characters due to noise and foreign signals.

As per claims 36 and 37, although Cahill et al. teaches the use of "don't care" recognition symbols (column 18, lines 33-38) there is no teaching of the use of a second template. But Grabowski et al. teaches a first MICR font template (Figures 9 and 10; column 6, lines 19-21; column 7, lines 6-15) to identify MICR characters; a missing MICR character position detector responsive to the first MICR font template to detect a position of a missing MICR character to at least on MICR character identified by the first MICR font template (column 4, lines 46-57; Grabowski et al. teaches that unrecognized character positions are specifically indicated for recognition during Pass 2); a second MICR font template responsive to the missing MICR character position detector to identify a MICR character in a position detected (Figure 8; column 3, line 65 through column 4, line 5; column 6, lines 18-25 and 51-59) by the missing MICR character position detector. Grabowski et al. teaches that each template is compared to a character template a second time in an attempt to recognize the previously unrecognized character. The second MICR font template (the template for the number "2") is merely another MICR character different from the first MICR font template (i.e., the template for the number "1").

It would have been obvious to one of ordinary skill in the art to utilize the template matching algorithm of Grabowski et al. in the image recognition system of Cahill et al. because it

is well-known, both use a two-pass system, and the addition of the Grabowski et al. method reduces the number of images that need to be gathered by the Cahill et al. system, thereby reducing the number of memory storage operations.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Johns whose telephone number is (703) 305-4788. The examiner in normally available Monday through Friday, at least during the hours of 9:00 am to 3:00 pm Eastern Time. The examiner may also be contacted by e-mail using the address: andrew.johns@uspto.gov. (Applicant is reminded of the Office policy regarding e-mail communications. See M.P.E.P. § 502.03)

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached on (703) 305-4706. The fax phone number for this art unit is (703) 872-9306. In order to ensure prompt delivery to the examiner, all unofficial communications should be clearly labeled as "Draft" or "Unofficial."

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center Receptionist whose telephone number is (703) 305-4700.

A. Johns
14 August 2004

ANDREW W. JOHNS
PRIMARY EXAMINER